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Applicant: NOKIA CORPORATION
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New Claims

1. A method for charging an account related to a terminal device (1) of a subscriber (A) to a first data network (10) for a network session rendered to said terminal device when roaming in a second data network (18), comprising the steps of
   - registrating said terminal device (1) to said second data network (18),
   - transmitting a network address of a first charging system (16) related to said first data network (10) from said first data network to said second data network (18)
   - establishing said network session for said terminal device (1) by said second data network (18),
   - assessing in said second data network first charge information about said network session,
   - transmitting said assessed charge information from said second data network (18) to said network address of said first charging system (16), and
   - calculating a charge for said network session at said first charging system (16) using said incoming first charge information,

   wherein said step of transmitting said network address of said first charging system (16) from said first data network (10) to said second

data network (18) is performed before said step of registrating said terminal device (1) to said second data network (18).

2. A method according to claim1, comprising the further steps of
   - saving said assessed first charge information about said network session to a second charging system (28) related to said second data network (18),
   - calculating a charge for said network session by second charging system (28) using said saved first charge information
   - charging said charge for said network session to a first operator of said first data network (10).

3. A method according to claim 2, in which said first charge information saved to said second charging system (28) is marked with a flag indicating that said first charge information is related to a subscriber of said first data network (10).

4. A method according to claim 2 or 3, in which said charge is charged after termination of said network session.

5. A method according to any one of the preceding claims, in which said first charge information is a bearer charge information.

6. A method according to any one of the preceding claims, in which said step of assessing a first charge information in said second data network is performed in near real-time or in real-time.

7. A method according to any one of the preceding claims, in which said step of transmitting said assessed first charge information from said second data network (18) to said network address of said first charging system (16) is performed in near real-time or in real-time.

8. A method according to any one of the preceding claims, in which charging said account is performed in near real-time or in real-time.

9. A method according to any one of the preceding claims, in which charging said account is performed online.

10. A method according to any one of the preceding claims, further comprising a step of transmitting subscriber information from said first data network (10) to said second data network (18) before said step of establishing said network session.

11. A method according to any one of the preceding claims, with the further steps of
    - assessing first-operator charge information related to said network session using said forwarded first charge information,
    - transmitting said assessed second-operator charge information to said network address of said first charging system (16),

    and in which calculation of charge for said network session by said first charging system is performed using in addition said incoming first-operator charge information.

12. A method according to claim 11, in which the step of assessing first-operator charge information related to said network session using said forwarded first charge information is performed in near real-time or in real-time

13. A method according to claim 11 or 12, in which the step of transmitting said assessed second-operator charge information to said network address of said first charging system (16) is performed in near real-time or in real-time.

14. A method according to any one of the preceding claims, in which said subscriber is subscribed to said first data network (10) through a second network operator, comprising the further steps of

- transmitting and saving said network address of said first charging system (16) from said first data network (10) to a server (48) related to said second operator of said first data network (10),
- forwarding from said first data network to said server (48) said first charge information received from said second data network,
- assessing second-operator charge information related to said network session using said forwarded first charge information,
- transmitting said assessed second-operator charge information to said network address of said first charging system (16),

and in which calculation of charge for said network session by said first charging system (16) is performed using in addition said incoming second-operator charge information.

15. A method according to claim 14, comprising the further step of transmitting said assessed operator charge information from said server (48) to a third charging system (50) related to said second operator.
16. A method according to claim 15, in which said operator charge is charged after termination of said session by said third charging system (48) to said first operator of said first data network (10).

17. A method according to any one of the preceding claims in which said account charged is a prepaid account.

18. A method according to any one of the preceding claims in which said steps of calculation of a charge for said network session by said first charging system (16) using said incoming first charge information and charging said account are performed in real-time.

19. A method according to any one of the preceding claims in which said network session is established between said terminal device (1) and a station (42) in a third data network (30), which station (42) is, regarding said network session, an originating or a terminating station.

20. A method according to claim 10 comprising, before said step of establishing said network session between terminal device (1) in said second data network (18) and said station (42) in said third data network (30), a further step of establishing a control network session between said terminal device (1) and said station (42), which control network session is routed through a first network control node (12) related to said first data network (10).

21. A method according to claim 11 in which said first charge information is transmitted via said control network session.

22. A method according to one of the preceding claims, in which at least one of said data networks (10, 18, 30) is a radio data network.

23. A method according to claim 14, in which said data networks (10, 18, 30) are packet switched radio data networks.

24. A network system comprising
    - a first data network (10),
    - at least one second data network (18),
    - a first-network charging system (16) related to said first data network (10), and
    - a first terminal device (1) subscribed to said first data network, wherein
    - said first data network (10) has a first-network service assessment system (12) communicating with a second-network service assessment system (22) in said second data network and adapted to transmit a network address of said first-network charging system (16) to said second-network service assessment system (22), and
    - said second-network service assessment system (22) is adapted to assess and to transmit first charge information during said network session to said first-network charging system (16) using said network address,

wherein said first-network service assessment system (12) is additionaly adapted to performing said step of transmitting said network address of said first charging system (16) from said first data network (10) to said second data network (18) before a step of registrating said first terminal device (1) to said second data network (18).

25. A network system according to claim 24, comprising in addition a second-network charging system (28) related to said second network (18) and communicating with said second-network service assessment system (22), in which said second-network service assessment system is additionally adapted to transmit said first charge information about said network session to said second-network charging system (28).

26. A network system according to claim 24 or 25, comprising a second-network session control system (20, 22, 24) adapted to establish and maintain a network session between the first network station (1) and a terminating or an originating second network station (42).

27. A network system according to any one of the claims 24 to 26, in which, to perform said transmission of said first charge information from said second-network service assessment system (22) to said first-network charging system (16), said second-network session control system (20, 22, 24) is additionally adapted to transmit said first charge information to said first-network session control system (12), and said first-network control system (12) is additionally adapted to transmit said received first charge information to said first-network charging system (16).

28. A network system according to any one of the claims 24 to 27, in which the first-network charging system (16) is adapted to transforming balance information related to the first network station (1), the transformation depending on the balance information and on the incoming first charge information related to said first network station

29. A network system according to claim 28, in which the first-network charging system (16) is adapted to perform said transformation in near real-time or real-time.

30. A network system according to any one of the claims 24 to 29, in which said second-network service assessment system (22) is adapted to assess and to transmit in near real-time or real-time said first charge information during said network session to said first-network charging system (16) using said network address.

31. A network system according to any one of the claims 24 to 30, in which said first charge information is a bearer charger information.

32. A network system according to one of the claims 24 to 26, in which said first-network session control system (12) is additionally adapted to assess during said network session and to transmit to said first-network charging system (16) first-operator charge information depending on said received charge information, and in which said first-network charging system (16) is adapted to transform said balance information in additional dependence of said incoming first-operator charge information.

33. A network system according to one of the claims 24 through 32, which additionally comprises a second-operator server (48) which is related to said first data network (10) and communicates with said first-network call session control system (12), and which is adapted to assess second-operator charge information related to said network session using said first charge information and to transmit said second-operator charge information to said first-network charging system (16), and in which said first-network charging system (16) is adapted to transform said balance information in additional dependence of said incoming second-operator charge information.

34. A network system according to claim 33, comprising in addition a second-operator charge system (50) related to said first data network (10) and communicating with said second-operator server (48), in which said second-operator server (48) is additionally adapted to transmit second-operator charge information about said network session to said second-network charge system (50).

35. A network system according to any one of the claims 24 to 34 in which the first charging system (16) is adapted to apply a real-time transformation algorithm to said types of incoming charge information.

36. A network system according to any one of the preceding claims, in which said first and second networks (10, 18) are GPRS Public Land Mobile Networks.

37. A network system according to claim 36, in which said second-network session control system comprises a serving GPRS support node (SGSN) (22), a GPRS Internet Protocol backbone (20), and a Gateway GPRS support node (GGSN) (24).

38. A network system according to claim 37 in which said second-network service assessment system (22) is integrated into said SGSN (22).